ticagrelor (tye-ka-grel-or)

Brilinta

Classification

Therapeutic: antiplatelet agents
Pharmacologic: platelet aggregation inhibitors

Pregnancy Category C

Indications

To decrease the incidence of thrombotic cardiovascular events associated with acute coronary syndrome (ACS).

Action

Both parent drug and its active metabolite inhibit platelet aggregation by reversibly interacting with platelet P2Y12 ADP-receptors, preventing signal transduction and platelet activation. Therapeutic Effects: Reduced sequelae of ACS including cardiovascular death, MI and stroke.

Pharmacokinetics

Absorption: 36% absorbed following oral administration.
Distribution: Unknown.
Protein Binding: 99% for ticagrelor and its active metabolite.
Metabolism and Excretion: Mosty metabolized in the liver (CYP3A4 enzyme system, some metabolism by CYP3A5) with conversion to an active metabolite (AR-C124910XX); excretion primarily via biliary secretion; 1% excreted unchanged or as active metabolite in urine.
Half-life: Ticagrelor—7 hr; Active metabolite—9 hr.

TIME/ACTION PROFILE (inhibition of platelet aggregation)

ROUTE ONSET PEAK DURATION
PO within 30 min 4 hr 5 days† following discontinuation

Contraindications/Precautions

Contraindicated in: Hypersensitivity; Active bleeding; History of intracranial bleeding; Severe hepatic impairment (increased risk of bleeding); Impending coronary artery bypass graft (CABG) surgery or other surgery (discontinue 5 days prior);

Lactation: Avoid breast feeding; Strong inhibitors/inducers of CYP3A enzyme system (avoid concurrent use if possible).

Use Cautiously in: Moderate hepatic impairment (consider risks of increased levels); Hypertension following recent CABG or percutaneous coronary intervention (PCI) in patients receiving ticagrelor (consider bleeding as a cause); Geri: Some elderly patients may be more sensitive to effects; OB: Use only during pregnancy if potential maternal benefit justifies potential risk to fetus; Pedi: Safe and effective use has not been established.

Adverse Reactions/Side Effects


Interactions

Drug-Drug: Strong inhibitors of CYP3A4/5 including atazanavir, clarithromycin, indinavir, itraconazole, ketoconazole, nefazodone, nelfinavir, ritonavir, saquinavir, telithromycin and voriconazole levels and the risk of bleeding and should be avoided. Potent inducers of CYP3A including carbamazepine, dexamethasone, phenobarbital, phenytoin and rifampin levels and effectiveness and should be avoided. Concurrent use of statins or statin-related adverse events, effectiveness and AUC levels and the risk of bleeding and should be avoided. Concurrent use of lovastatin or simvastatin in doses >40 mg/day may risk of statin-related adverse reactions. May also alter digoxin levels (monitoring recommended). Risk of bleeding by anticoagulants, fibrinolytics and chronic NSAIDs.

Route/Dosage

PO (Adults): Loading dose—180 mg; followed by maintenance dose—90 mg twice daily.

NURSING IMPLICATIONS

Assessment

● Assess patient for symptoms of stroke, peripheral vascular disease, or MI periodically during therapy.

● Observe patient for signs and symptoms of hypersensitivity reactions (rash, facial swelling, pruritus, laryngeal edema, wheezing). Discontinue drug and notify health care professional immediately if symptoms occur. Keep epinephrine, an antihistamine, and resuscitation equipment close by in case of anaphylactic reaction.

● Evaluate patients with history of stroke, peripheral vascular disease, or MI in the past year periodically during therapy.

● Perform baseline CBC with differential and repeat throughout therapy as indicated.

Nursing Considerations

● Drug name associates indicate most frequent.

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Lab Test Considerations: May cause ↑ serum uric acid and ↑ serum creatinine.

Potential Nursing Diagnoses
- Risk for injury (Adverse Reactions)

Implementation
- Administer 180 mg (two 90 mg tablets) as a loading dose, followed by 90 mg twice daily. After initial, 525 mg loading dose of aspirin, administer maintenance dose of 75 – 100 mg daily. Administer without regard for food.
- Patients who have received a loading dose of clopidogrel may be started on ticagrelor.
- Discontinue ticagrelor 5 days before planned surgical procedures. If ticagrelor must be temporarily discontinued, restart as soon as possible. Premature discontinuation of therapy may increase risk of myocardial infarction, stent thrombosis, and death.

Patient/Family Teaching
- Instruct patient to take ticagrelor exactly as directed. Take missed doses as soon as possible unless almost time for next dose; do not double doses. Do not discontinue ticagrelor without consulting health care professional; may increase risk of cardiovascular events. Advise patient to read the Medication Guide before starting therapy and with each Rx refill in case of changes.
- Advise patient that daily aspirin should not exceed 100 mg and to avoid taking other medications that contain aspirin.
- Inform patient that they will bleed and bruise more easily and it will take longer to stop bleeding. Advise patient to notify health care professional promptly if unusual, prolonged, or excessive bleeding or blood in stool or urine occurs.
- Inform patient that ticagrelor may cause shortness of breath which usually resolves during therapy. Advise patient to notify health care professional if unexpected or severe breathlessness or symptoms of hypersensitivity reactions occur.
- Advise patient to notify health care professional of medication regimen prior to treatment or surgery or dental procedure. Prescriber should be consulted before stopping ticagrelor.
- Instruct patient to notify health care professional of all Rx or OTC medications, vitamins, or herbal products being taken and consult health care professional before taking any new medications, especially aspirin or NSAIDs.
- Advise patient to notify health care professional if pregnancy is planned or suspected or if breast feeding.

Evaluation/Desired Outcomes
- Decreased thrombotic cardiovascular events in patients with acute coronary syndrome (ACS)

Why was this drug prescribed for your patient?